

Amdt. dated April 11, 2005
Reply to Office action of Feb. 9, 2005

Serial No. 10/053,113
Docket No. SVL920010095US1
Firm No. 0055.0050

REMARKS/ARGUMENTS

1. The Amended Claims Comply With the Definiteness Requirement

The Examiner rejected claims 4-6, 16-18, and 27-28 as indefinite (35 U.S.C. §112, par.

2). In particular, the Examiner found that claims 4, 16, and 27 were indefinite. Applicants traverse.

The Examiner noted that Applicants should not have deleted the word "type" from "object type". (Final Office Action, pg. 2) Applicants agree and have amended claim 16 to add back the word "type", which was mistakenly removed. Applicants note that word "type" was not removed from the corresponding claims 4 and 27. Applicants request entry of this amendment because it does not alter the scope of the claims, but instead corrects an inadvertent mistake the Examiner in fact noted.

The Examiner rejected these claims on the grounds that the Specification does not provide support for claims 4 (lines 5-6), 16 (lines 1-2), and 27 (lines 5-6), and especially the structure of the claimed data object and associated types as well as the links between the claimed data object type and separate programs. (Final Office Action, pg. 9) Applicants traverse for the following reasons.

Claims 4, 16, and 27 require that the attribute object type indicates one of a plurality of different data structure formats that are searchable through separate application programs. The Specification expressly discloses this requirement: "an attribute for each asset may be defined to have an attribute object type indicating one of a plurality of different data structure formats that are searchable through separate application programs." (Office Action, pg. 2, lines 27-29)

Moreover, the Specification discloses that an "attribute 52a would have an attribute name 54a, an attribute value type 56a (e.g., text, integer, large object, image, movie, etc.), and an attribute location." (Specification, pg. 5, lines 26-28) The Specification further discloses attribute objects having an attribute object type:

In the described implementations, each instance of an asset type is capable of having attribute objects providing the attributes stored at different locations and within different data structures. In this way the attribute objects or values for an asset instance may comprise columns in different database tables, text files, multimedia content, etc.

(Specification, pg. 7, lines 7-10).

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Thus, the Specification discloses that there are different attribute object types as claimed, such as text, a large object, image, movie, etc.

The Specification further discloses that the attribute object types are searchable through separate application programs. The Specification also discloses that the "query engine 6 would utilize a database program 10 and a text search engine 12 and text application program 14 to access and manipulate data in database tables and text files, respectively." (Specification, pg. 4, lines 13-15) The Specification discloses how a database program is called to search an attribute object if the attribute name of the attribute is a database table. (Specification, pg. 15, lines 5-25, FIG. 8a). Further, if the attribute name is not a database table, then a text search engine 12 program is called to process the file, i.e., attribute object, for the attribute. (Specification, pg. 16, lines 9-18, FIG. 8b)

Thus, Applicants submit that the claims satisfy the definiteness requirement of 35 U.S.C. §112, par. 2 because the Specification provides sufficient written description to support the claim requirements the Examiner noted, such as the data object having types and separate application programs that process the different attribute object types.

Accordingly, Applicants request the Examiner to withdraw the rejection of claims 4-6, 16-18, and 27-28.

2. Claims 1-3, 7-15, 19-26, and 30-34 are Patentable Over the Cited Art

The Examiner rejected claims 1-3, 7-15, 19-26, and 30-34 as anticipated (35 U.S.C. §102(3)) by Dorsett (U.S. Patent No. 6,658,429). Applicants traverse.

Claims 1, 12, and 24 concern querying instances of asset classes in a digital library and require: providing at least one asset class having at least one attribute, wherein each attribute is defined to have an attribute object comprising an external data object and attribute object type identifying a type of the attribute object; providing an asset object for each instance of one asset class, wherein the asset object includes information for the attributes in the instance of the asset class; providing a query indicating an asset name, search predicate, at least one attribute operator, and attribute value, wherein the attribute operator is associated with at least one attribute included in the indicated asset name; and processing the query by accessing asset object instances

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of the asset name to determine asset object instances having one attribute object for the attribute associated with the attribute operator that satisfies the search predicate and the attribute value.

The Examiner cited col. 13, line 42 to col. 15, line 15, FIG. 4B, col. 6, lines 46-59 of Dorsett discloses the requirements of the first limitation that at least one asset class has at least one attribute, wherein each attribute is defined to have an attribute object comprising an external data object and attribute object type identifying a type of the attribute object.

The cited col. 13 mentions that an XYDataSet object represents data from a large variety of sources. Although the cited object includes data from different sources, nowhere does the cited col. 13 anywhere disclose that an asset class is defined as having an attribute object comprising an external data object and an object type identifying a type of the attribute object. Instead, the cited col. 13 mentions that the object has data from different sources, not attributes defined to have an external data object as claimed.

The cited col. 14 mentions how an XML document can have definitions of instrumentation resources, working substrates, and experimental procedures. The cited col. 14 mentions that static methods map XML documents into Java objects and relational database table columns are generally ill equipped to handle such data. The XML document includes a portion of the definition of the experimental procedure.

Although the cited XML document includes data from different sources, nowhere does the cited cols. 14-15 anywhere disclose that an asset class is defined as having an attribute object comprising an external data object and an object type identifying a type of the attribute object. Instead, the cited col. 13 mentions that an XML document includes definitions of procedures, not attributes defined to have an external data object as claimed.

In the Response to Arguments (Final Office action, pg. 10), the Examiner likens the XYDataSet objects at col. 6, lines 46-59 as disclosing the claimed attribute object. The cited col. 6 mentions that experimental data can be represented in a system as an XYDataSet object, a data structure holding values measured or derived for one or more members of a library of materials, such as an array having an element for each member in a corresponding library of materials. Data can also be represented as an image object, time fixed data set, etc.

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The cited col. 6 discusses how an object, the XYDataSet object, holds values derived from other sources. Although the cited object may have information from other sources, nowhere does the cited col. 6 anywhere disclose that an asset class is defined as having an attribute object comprising an external data object and an object type identifying a type of the attribute object. The cited XML object is not defined as having an attribute object comprising an external data object. Instead, the cited col. 6 mentions that the object has data from different sources, not attributes defined to be an external data object and an attribute object type as claimed.

The Examiner cited FIGs. 7 and 8a-8b and associated text as disclosing the claim requirement of providing a query indicating an asset name, search predicate, at least one attribute operator, and attribute value, wherein the attribute operator is associated with at least one attribute included in the indicated asset name. (Final Office Action, pg. 4) The Examiner further cited col. 19, lines 12-37 as disclosing the claim requirement for processing the query. Applicants traverse.

Dorsett mentions that the cited FIGs. 7 and 8A-B concern using a system to retrieve data from a database. A user interface allows a user to select fields for a query of a database to search fields defined for specified projects and search for types of experiments for specified projects. For each type of experiment, the user can select project specified fields to search. (Dorsett, col. 18, lines 44-67). Dorsett further mentions that queries can be represented as objects and the database server processes the query and searches the database tables for records that satisfy the search terms. (Col. 19, line 1-45).

Although the cited Dorsett discusses how to select fields to search, nowhere does the cited Dorsett disclose a query indicating an asset name, search predicate, attribute operator and attribute value, where the attribute operator is associated with one attribute in the indicated asset name. Further, nowhere does the cited Dorsett anywhere disclose that the query is processed by accessing asset object instances of the asset name to determine whether the asset object instances matching the asset name have one attribute objects associated with the attribute operator that satisfies a search predicate and search value. Instead, the cited Dorsett discusses providing search terms to search a database table. The claims on the other hand require providing for the query an asset name to search an asset instance having an attribute object, which is an external

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object to the asset object instances being searched, matching the query parameters. Instead, the cited Dorsett discusses a search of an XML document, not a search of external objects defined for other asset objects as claimed.

For instance, nowhere does Dorsett anywhere disclose the particular claimed search technique where a determination is first made of asset object instances having the asset name in the query and then determining those determined asset object instances having one attribute object for an attribute associated with an attribute operator that satisfies search criteria. Nowhere does Dorsett disclose searching asset object instances for attribute objects, comprising external data objects, that satisfy the query.

Accordingly, claims 1, 12, and 24 are patentable over the cited art because the cited Dorsett does not disclose all the claim requirements.

Claims 2, 3, 7-11, 13-15, 19-23, 25, 26, and 30-34 are patentable over the cited Dorsett because they depend from one of claims 1, 12, and 24. The below discussed dependent claims provide additional grounds of patentability over the cited art.

Claims 2, 14, and 25 depend from claims 1, 13, and 24 and further require that the query includes multiple attribute operators and attribute values to query asset object instances whose attribute objects match the attribute values and search predicate for each attribute operator.

The examiner cited FIG. 8A as teaching the additional requirements of claims 2, 14, and 25. (Final Office Action, pg. 5) Applicants traverse.

The discussion in Dorsett at col. 19 with respect to FIG. 8A discusses how a user may enter search terms to search fields in a database. Nowhere does the cited Dorsett anywhere disclose multiple attribute operators to query asset object instances that match an asset name having attribute objects matching attribute values and a search predicate for each of the multiple attribute operators. In other words, nowhere does the cited Dorsett disclose providing a query having multiple attribute operators, where each attribute operator provides an attribute value to use to search attribute objects for an attribute associated with the attribute operator.

In the Response to Arguments, the Examiner further cited pointed out that Dorsett discloses a query indicating an asset name, the PPR element 805 in FIG. 8A, search predicate unit 800, FIG. 8a and attributes. (Final Office Action, pg. 10-11) Although the cited Dorsett discusses how to search fields in a database, the cited Dorsett does not disclose the specific

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claimed query of multiple attribute operators and values to query object instances satisfying the attribute query parameters, e.g., the attribute operators and values, that are indicated in asset object matching the asset name parameter of the query, as set forth in the base claims. Thus, Dorsett discusses a general query, not a query of attribute objects satisfying attribute query parameters that are included in asset object instances that match an asset name in the query.

Accordingly, claims 2, 14, and 25 provide additional grounds of patentability over the cited art.

Claims 3, 15, and 26 depend from claims 1, 13, and 24 and further require that each asset object instance includes information on a file location of attribute objects providing the attributes for the asset object instance, and wherein processing the query to search the attribute object comprises accessing the attribute object at the file location indicated in the asset object instance having the attribute object.

The Examiner cited col. 14, lines 46-60 and col. 15, lines 1-30 of Dorsett as disclosing the requirements of these claims. (Final Office Action, pg. 5).

The cited col. 14 mentions that a database system might store only a portion of an entire document and that the laboratory data management system specifies a subset of the attributes of an instrumentation procedure document to store. Nowhere does the cited col. 14 anywhere disclose that each asset object instance, which is being searched, includes information on a file location of the attribute objects and then accessing the attribute object at the file location to search. Nowhere does the cited col. 14 anywhere disclose that an object instance is queried by querying attribute objects of the asset object instance that comprise external data objects at file locations. Instead, the cited col. 14 mentions storing portions of an XML document by storing a subset of attributes of the document.

The cited col. 15 discusses an XML document providing a field mapping to a Java class. This permits the organization of the database on attributes. The database server process maps the Java object fields to a table.

Although the cited col. 15 discusses how to map an XML document to Java class fields to organize a database, nowhere does the cited col. 15 anywhere disclose that each object instance includes information on a file location of the attribute objects providing the attributes for the asset object instance and then querying the external attribute objects at the indicated file locations

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in the information for the attribute object in the asset object instance. Nowhere does the cited col. 14 anywhere disclose that an attribute object of an asset object instance is queried by searching an external data object for the asset object instance at a file location indicated in the asset object instance. Instead, the cited col. 14 discusses how an XML document maps to a Java object.

Accordingly, claims 3, 15, and 26 provide additional grounds of patentability over the cited art.

Claims 7, 19, and 30 depend from claims 1, 12, and 24 and further require one attribute comprises a relationship attribute that defines an association of a first and second asset types and a relationship attribute object associating instances of the first and second asset types. The attribute operator for a relationship attribute is associated with one attribute from the first and second asset types, wherein processing the query to search the attribute object for each asset object instance of the first asset type further comprises: accessing the relationship attribute object to determine all asset object instances of the second asset type associated with the asset object instance; and for each determined asset object instance, processing the query by determining the determined asset object instances of the second type whose attribute object for the attribute of the second asset type associated with the attribute operator matches the attribute value and satisfies the search predicate.

The Examiner cited col. 7, lines 11-17 and 34-42 and col. 6, line 56 to col. 8, line 23 of Dorsett as disclosing the requirements of these claims. (Final Office Action, pgs. 5-6) Applicants traverse. Note the Examiner cited col. 7, lines 11-7. Applicant assumes the Examiner intended col. 7, lines 11-17.

The cited col. 7, lines 11-17 mentions that a database stores experimental and analytic data derived from experiments and maintains three representations of each item of data. Nowhere does this cited col. 7, lines 11-17 anywhere disclose the claim requirement that one attribute comprises a relationship attribute defining an association of a first and second asset types and a relationship attribute object associating instances of the first and second asset types. Instead, the cited col. 7 discusses how a database stores experimental and analytic data and three representations of item of data.

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The cited col. 7, lines 34-42 mentions that a database server parses data for each object represented in an XML stream and uses the extracted object information to store each object in database 180 by mapping the object to one or more database tables. Nowhere does the cited col. 7, lines 34-42 anywhere disclose the claim requirement that one attribute comprises a relationship attribute defining an association of a first and second asset types and a relationship attribute object associating instances of the first and second asset types.

Further, nowhere does this cited col. 7, lines 34-42 disclose the claim requirements of processing a query by determining the determined asset object instances of the second type whose attribute object for the attribute of the second asset type associated with the attribute operator matches the attribute value and satisfies the search predicate. In other words, nowhere does the cited col. 7 anywhere disclose determining object instances of a second asset type associated with object instances of the first type, and then determining those determined asset object instances of the second type whose attribute object satisfies the search predicate and value.

The cited col. 7, line 56 to col. 8, line 23 discusses how a user registers a library by requesting a new LibraryID. The data server process generates a libraryID and defines the library geometry by prompting the user to input the number of rows and column. The user can also specify values fro one or more searchable fields. The user can also associate one or more data files with the new library and the data server process can create separate objects representing each new library. The database server process creates an experiment object representing the preparation of the library and a separate object representing each new library.

Although the cited cols. 7-8 discuss how to create a new library, nowhere do these cited cols. 7-8 anywhere disclose the claim requirement that one attribute comprises a relationship attribute defining an association of a first and second asset types and a relationship attribute object associating instances of the first and second asset types. Further, nowhere do the cited cols. 7-8 disclose processing a query by determining the determined asset object instances of the second type whose attribute object for the attribute of the second asset type associated with the attribute operator matches the attribute value and satisfies the search predicate.

Accordingly, claims 7, 19, and 30 provide additional grounds of patentability over the cited art.

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Claims 8, 20, and 31 depend from claims 7, 19, and 30 and further require that the relationship attribute object comprises a database table, wherein a first column in the database table is for unique identifiers of instances of the first asset type and a second column in the database table is for unique identifiers of instances of the second asset type. A row in the database table identifies one instance of the first asset type identified by the unique identifier in the first column of the row that is associated with one instance of the second asset type identified by the unique identifier in the second column of the row.

The Examiner cited col. 11, lines 5-15 of Dorsett as disclosing the additional requirement of these claims. (Office Action, pg. 6) Applicants traverse.

The cited col. 11 shows information being stored in a database. Nowhere does the cited col. 11 anywhere disclose that a relationship attribute associating instances of first and second asset types comprise ad database table, wherein a first column is for identifiers of a first asset type and the second column for identifiers of the second asset type, where this database is searched as part of determining attributes of instances of the second asset type that match a query on asset object instances of a first asset type. Nowhere does the cited col. 11 anywhere disclose using a database table as a relationship attribute as claimed.

Accordingly, claims 8, 20, and 31 provide additional grounds of patentability over the cited art.

The dependent claims 9-11, 21-23, and 32-34 provide additional grounds of patentability over the cited art because their additional requirements in combination with the base claims provide further distinctions over the cited art.

The Examiner rejected claim 29 as obvious (35 U.S.C. §103) over Dorsett in view of Boucher (U.S. Patent No. 6,745,368). Applicants traverse and submit that claim 29 is patentable over the cited art because it depends from claim 24, which is patentable over the cited art for the reasons discussed above.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-34 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0460.

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The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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